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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,347	07/30/2001	Yishay Mansour	03022/37258	5770
20350	7590	10/21/2005	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			GREY, CHRISTOPHER P	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,347

Applicant(s)

MANSOUR ET AL.

Examiner

Christopher P. Grey

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 4-7, 9, 14, 16, 19, 22, 23, 25, 29-32, 34, 40-43 and 45 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8, 10-13, 17, 18, 20, 21, 26-28, 33, 35-39, 44 and 46-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Responsive to amendments received on July 25, 2005, amended claims 1, 4, 11, 12, 14, 19, 20, 22-25.

New claims 26-58 have been entered as requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 8, 10, 11, 12, 13, 15, 17, 18, 20, 21, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett (US 2002/0048277)

Claim 1, 26, 37 Bennett discloses associating (sorting) all the queues of the buffer in a series of buckets, where the buckets are logical groupings (Page 3 paragraph 0026). The queues are associated with the queue buckets according to the size of the size of the queue (Page 3 paragraph 0031).

Bennett discloses assigning/associating (selecting) according to a queue bucket (group) containing a number of queues in accordance with the size (sorted order) as disclosed on page 3 paragraph 0031.

Bennett discloses the buffer being configured to form n buckets (groups), corresponding to queues of varying lengths (page 3 paragraph 0026 and 0027).

Bennett discloses receiving a packet into one of the queues associated with its bucket based on the determination of whether the capacity for storing packets is exceeded (page 3 paragraph 0031 and 0032).

Claim 2, 13, 27, 38 Bennett discloses associating queues with a bucket (group) based on size, where the maximum sizes of the queues that can be associated with the bucket are given by a function (paragraph 0026 and 0027).

Claim 3, 21, 28, 39, 51, 53, 56, 58 Bennett discloses that the size ranges (allocated space) of the buckets (groups) can be changed as the size of the queues change (page 3 paragraph 0028), where the queues are associated to buckets based on size (harmonically).

Claim 8, 15, 33, 44 Bennett discloses buffer space being allocated by a longest queue discard policy (buffer management policy) that is based on a number of set conditions (page 2-3 paragraph 0025).

Claim 10, 17, 35, 46 Bennett discloses each bucket containing a number of queues, where there is a fixed size range, limiting the amount of queues stored in a bucket (page 3 paragraphs 0027 and 0028).

Claim 11, 18, 36, 47 Bennet discloses the size ranges (allocated space) of the buckets being dynamically changed as the queue size changes (page 3 paragraph 0028).

Claim 12 Bennett discloses associating (sorting) all the queues of the buffer in a series of buckets, where the buckets are logical groupings (Page 3 paragraph 0026). The queues are associated with the queue buckets according to the size of the size of the queue (Page 3 paragraph 0031).

Bennett discloses assigning/associating (selecting) according to a queue bucket (group) containing a number of queues in accordance with the size (sorted order) as disclosed on page 3 paragraph 0031.

Bennett discloses associating queues with a bucket (group) based on size, where the maximum sizes of the queues that can be associated with the bucket are given by a function (paragraph 0026 and 0027).

Bennett discloses receiving a packet into one of the queues associated with its bucket based on the determination of whether the capacity for storing packets is exceeded (page 3 paragraph 0031 and 0032).

Bennett discloses the discarding of packetized data in the event that the acceptance of a packet will exceed the maximum capacity (page 3 paragraph 0032).

Claim 20 Bennet discloses a buffer (memory) providing a capacity of space, adapted to contain a plurality of queues (page 2 paragraph 0023).

Bennett discloses a controller (see abstract) for associating (sorting) all the queues of the buffer in a series of buckets, where the buckets are logical groupings (Page 3 paragraph 0026). The queues are associated with the queue buckets according to the size of the size of the queue (Page 3 paragraph 0031).

Bennett discloses associating queues with a bucket (group) based on size, where the maximum sizes of the queues that can be associated with the bucket are given by a function (paragraph 0026 and 0027).

Claim 24 Bennett discloses the total capacity (M) not being exceeded by the total size of a bucket (group of queues) as disclosed in Fig 4.

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Claim 50, 52, 54, 55, 57 Bennett discloses establishing a total buffer size based on a number N, of the plurality of queues (0032); a number k of the queues in the at least one group; and a ranked order of the queues in the at least one group based on queue length (paragrapg 0026 and 0027)

Allowable Subject Matter

3. Claims 4, 5, 6, 7, 9, 14, 16, 19, 22, 23 and 25, 29-32, 34, 40-43, 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed on July 25, 2005 have been fully considered but they are not persuasive.

(a) The Applicant argued that the cited art does not disclose the applicant's claimed "allocated step".

The examiner maintains that the same limitation, in its broadest term, is already discussed in the rejection of claim 1, 20 and 52 wherein Bennett discloses associating a number of queues into groups/buckets within a buffer (page 3 paragraph 0026 and 0028), where any space within the buffer is considered a portion of space.

(b) The applicant argued that the cited art does not disclose the applicant's claimed "accepting a data packet into one or more queues in said at least one group responsive to whether the data packet will cause the space occupied in the buffer by the queues in the group to exceed the allocated portion of the space."

The examiner maintains that the same limitation, in its broadest term is already discussed in the rejection of claim 1, 20 and 52 wherein Bennett discloses a node containing a number of groups, each group containing a number of queues (paragraph 0026). Bennett also discloses accepting a data packet based on determining if the capacity of a node is not exceeded (paragraph 0032). Inherently, if the capacity of a node is exceeded, the capacity of a group must be exceeded as well.

(c) The applicant argues that the cited art does not disclose the applicant's claimed "establishing a total maximum buffer space of B_k for said number k of said output queues. Wherein $B_k < M$.

The examiner maintains that the same limitation in its broadest term is already disclosed in the rejection of claim 12, wherein Bennet discloses that there is a finite size to the buffer memory (paragraph 0052). Bennett also discloses each buffer containing a number of queues, where the space occupied by the queues is ensured not to exceed the buffer's maximum capacity (paragraph 0006).

Bennett discloses discarding a queue if a capacity is exceeded.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Choudhury et al. (US 5541912) discloses a dynamic threshold system and method for allocating memory among different output queues in a buffer. The invention also discloses determining a length of an output queue.

(b) Hluchyj et al. (US 5231633) discloses in fig 4 an enqueueing process whereby queues are grouped according to a class of service (queue length or bandwidth).

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Grey
Examiner
Art Unit 2667

C. Grey
10/6/05

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SUPERVISORY PATENT EXAMINER
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10/11/05